

No. 632,221.

Patented Aug. 29, 1899.

C. E. LONGDEN.

MACHINE FOR FORMING RUBBER ARTICLES.

(Application filed May 16, 1899.)

(No Model.)

Fig. 1.

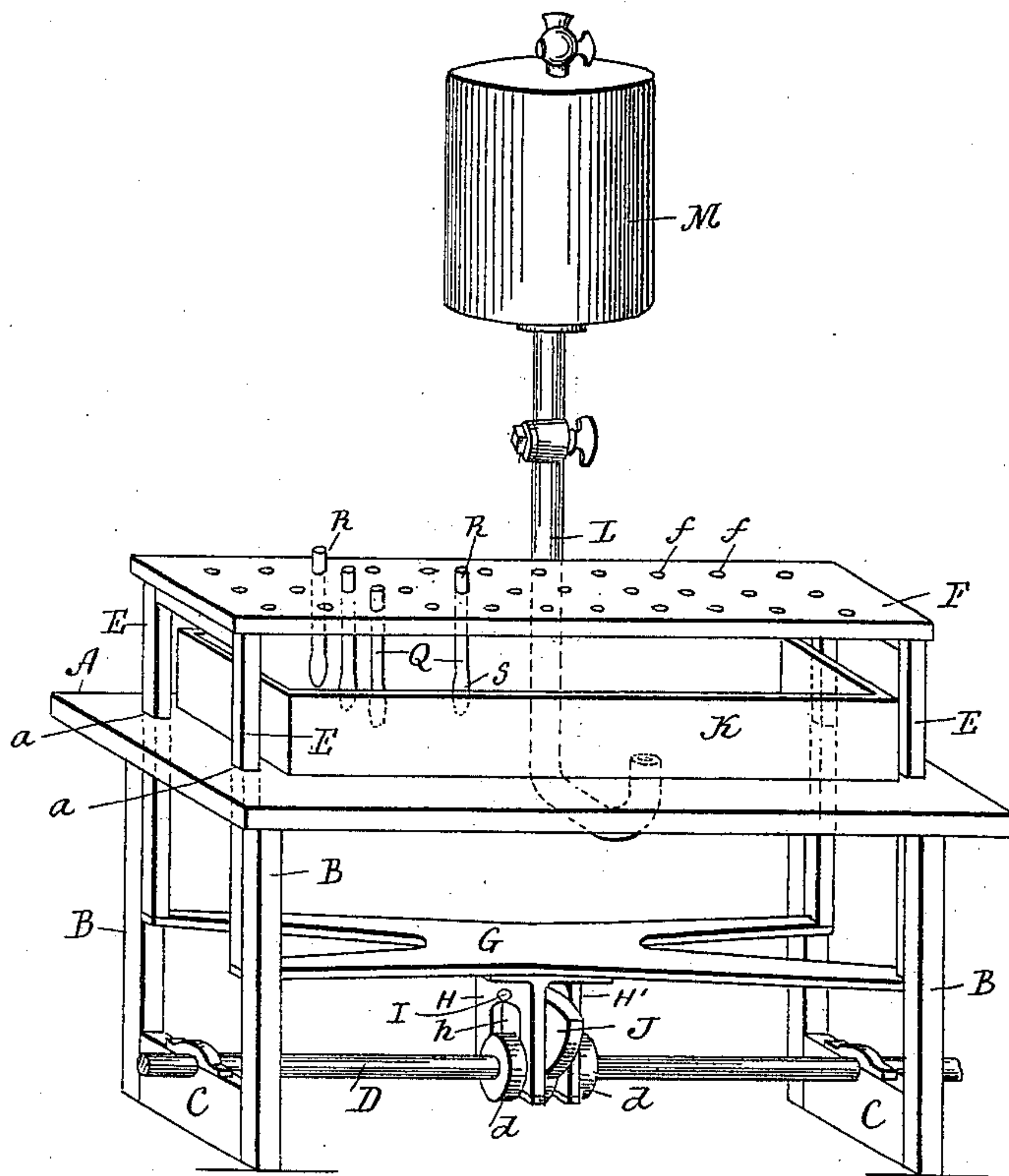


Fig. 2.

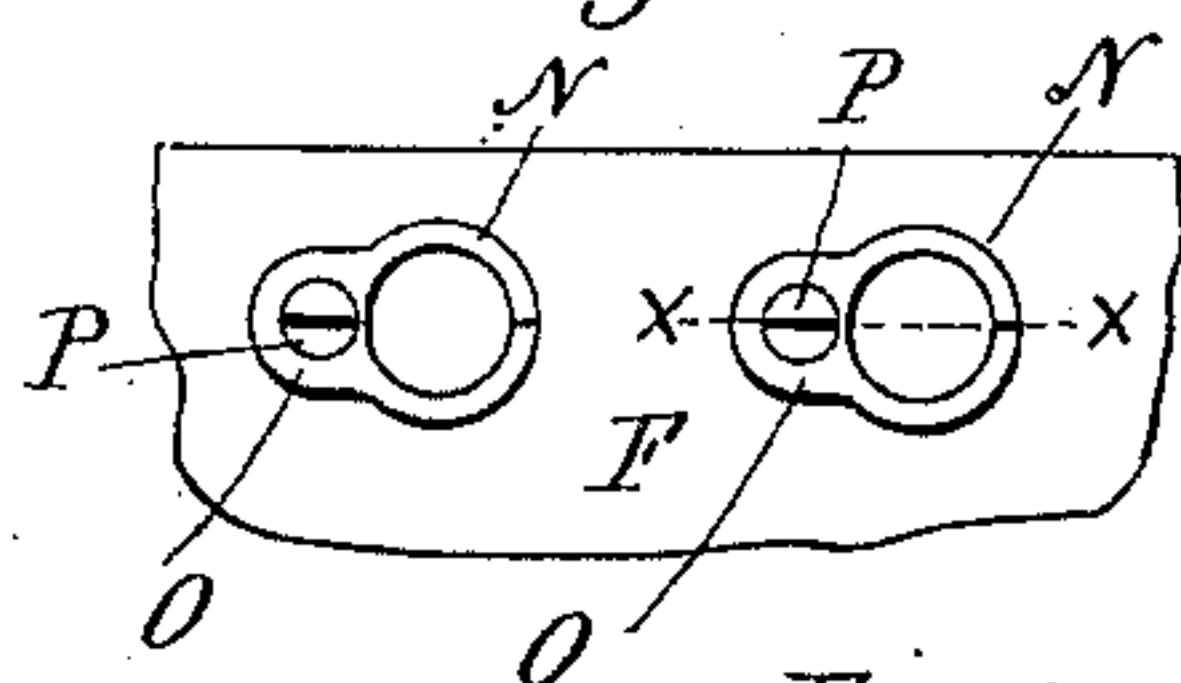


Fig. 4.

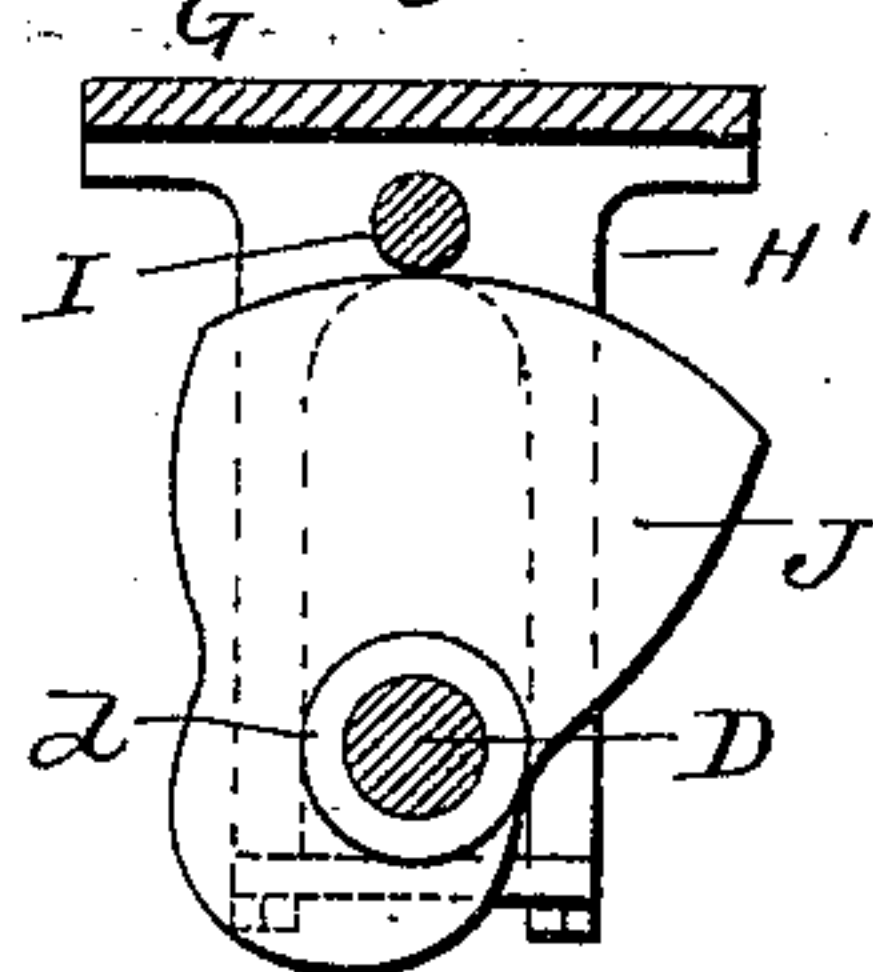
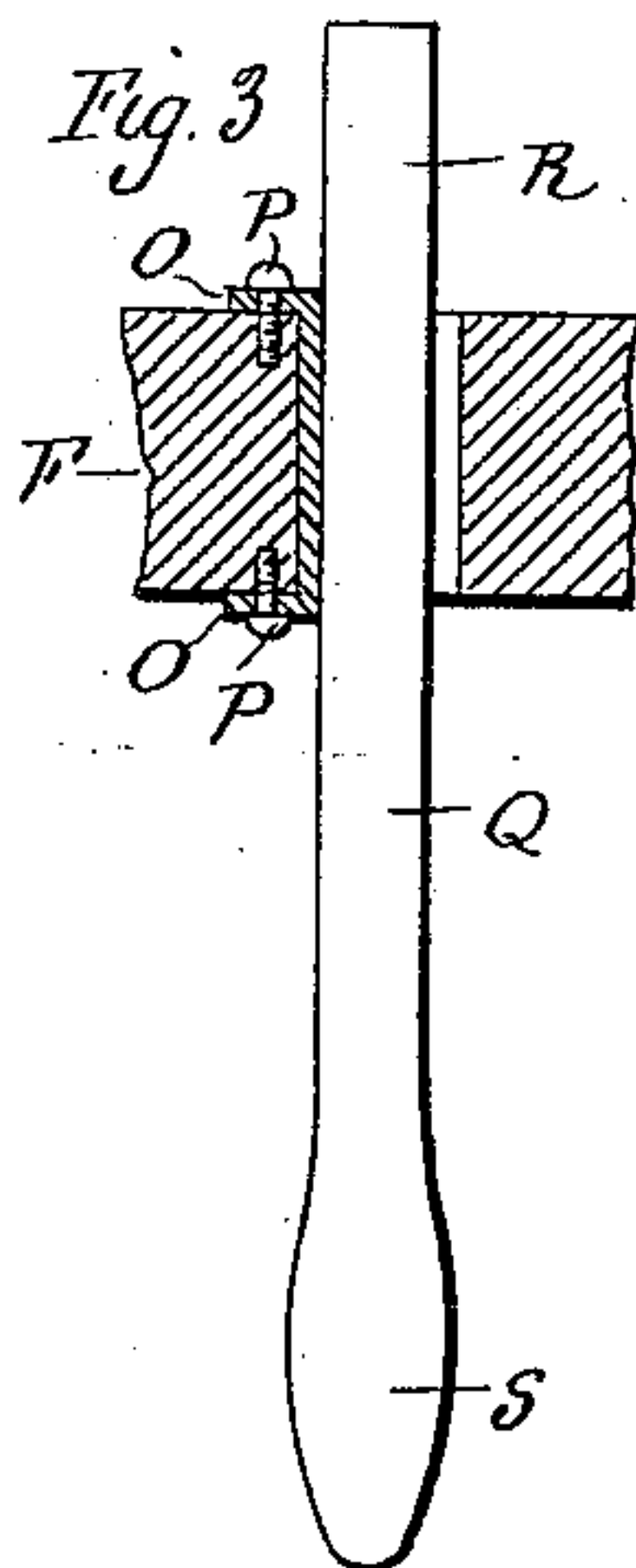


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

CHARLES E. LONGDEN, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE SEAMLESS RUBBER COMPANY, OF SAME PLACE.

MACHINE FOR FORMING RUBBER ARTICLES.

SPECIFICATION forming part of Letters Patent No. 632,221, dated August 29, 1899.

Application filed May 16, 1899. Serial No. 717,048. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. LONGDEN, of New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Machines for Forming Rubber Articles; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a perspective view of a machine constructed in accordance with my invention; Fig. 2, a top or plan view of a portion of the perforated plate; Fig. 3, a broken sectional view on the line *xx* of Fig. 2, showing a former as held by the clip; Fig. 4, a sectional view through the bracket and shaft, showing the formation of the lifting-cam on the shaft.

This invention relates to an improvement in machines for forming rubber nipples, and is an improvement upon the machine for which Letters Patent of the United States were granted to me January 2, 1877, No. 185,939, the object of the invention being to produce a machine in which the formers will be dipped automatically, to improve the clips in which the formers are held, and to feed the rubber solution from the reservoir into the bottom of the tank and so as to prevent the admission of air thereto; and the invention consists in the details of construction and combinations of parts, as will be hereinafter described, and particularly recited in the claims.

As in my previous patent, the machine consists of a table A, supported by legs B, the legs at each end being connected by braces C, which also form bearings for a driving-shaft D. In the table are vertical openings *a* for the passage through the table of vertical supports E, which at their tops carry a perforated plate F and which at their lower ends are connected by a web G. To the under side of the web G is fixed a bracket consisting of two depending plates H H', each of which is formed with a vertical clearance-slot *h* for the passage through them of the driving-shaft B, and the upper end of the bracket

is formed with a bearing-surface, herein represented as a roller I. On the shaft and between the plates H H' is a cam J of suitable form to alternately raise the web G and permit the same to fall. If the shaft is not otherwise held against lateral movement, it may be provided with collars *d d*, arranged on opposite sides of the depending plates H H' of the bracket. Upon the table and beneath the plate F is a tank or receptacle K for the rubber solution, which is fed into the bottom of the tank through a pipe L from a reservoir M. The particular object of feeding the solution into the bottom of the reservoir is to prevent the admission of air into the solution, which causes bubbles to form in the articles being manufactured—a difficulty experienced when the solution is fed into the top of the tank. The perforations *f* in the plate F are each provided with a metal bushing or clip consisting of a split tube N, corresponding in length substantially to the thickness of the plate and formed at opposite ends with ears O O, which are adapted to be turned down upon the upper and lower faces of the plate and be secured thereto by screws or rivets P, as shown in Figs. 2 and 3, and into these clips molds or formers Q are placed, said formers having shanks R, corresponding to the bushing or clips, and so as to be securely clasped thereby, and enlarged ends S, corresponding to the form of the nipple to be manufactured. These formers are arranged so as to depend from the under face of the plate F and extend to the desired degree into the solution in the tank K, which tank is kept constantly filled to the required depth. The formers being in position and the tank filled, the machine is set in operation, and the revolution of the shaft D turns the cam J, raises the web G, and lifts the plate F, so as to raise the formers out of the solution in the tank. Then the continued movement of the cam permits the web G to gradually fall and so as to cause the formers to enter the solution. As usual in the manufacture of rubber nipples a portion of the solution adheres to the formers and partially sets when the formers are raised, and this dipping operation is repeated as many times as desired. After the dipping is completed the plate F may be

removed and another one substituted in its place and the operation continued as above. As before stated, when required to replenish the solution in the tank the supply is fed into
5 the bottom of the tank, and so the possibility of the formation of air-bubbles in the tank is avoided.

Having fully described my invention, what I claim as new, and desire to secure by Letters
10 Patent, is—

1. In a machine for forming rubber articles, the combination with a table and a tank thereon, of a plate arranged over said tank, and adapted to be raised and lowered with respect
15 thereto, said plate formed with vertical perforations, spring-clips in said perforations and molds or formers in said clips, substantially as described.

2. In a machine for forming rubber articles,
20 the combination with a tank and a plate arranged over said tank, and adapted to be raised and lowered with respect thereto, said plate formed with vertical perforations, clips in said perforations, consisting of split tubes

with ears at the opposite ends adapted to be
25 turned down and secured to the opposite faces of said plates and molds or formers in the clips, substantially as described.

3. In a machine for forming rubber articles, the combination with the table and tank
30 thereon, of vertically-movable guides, extending through the table, a mold-holder plate carried at their upper ends, a web connecting the lower end of said guides, a bracket depending from the under side of the web, a
35 shaft below said web, and extending through said bracket, and a cam on said shaft adapted to raise said web and permit the same to fall, whereby the mold-holder plate is raised and
40 lowered over the said tank, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CHARLES E. LONGDEN.

Witnesses:

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LILLIAN D. KELSEY.